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COOKING APPARATUS

CROSS REFERENCE TO RELATED APPLICATIONS

The present application is a continuation-in-part of US Patent Application 29/194,932 filed December 4, 2003, and which is incorporated herein by reference.

5 FIELD OF THE INVENTION

The present invention is directed at a cooking apparatus with a preferred embodiment featuring a self-integrated grill assembly, and a support and grill assembly combination comprising the self-integrated grill as well as a support device (e.g., a stand-up pedestal support which couples or interconnects with the self-integrated grill assembly).

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BACKGROUND OF THE INVENTION

A variety of supported grill assemblies can be seen in the prior art such as the pedestal grill assemblies presented in US Patent Nos. 3,931,805; 5,404,795; 5,875,772 and EP 018692. These pedestal supports are intended to provide a grill unit that is at a desired “stand-up” cooking height relative to a standing person. They are rather cumbersome and are not generally designed for mobile transport and hence are not generally deemed mobile in nature, or, if are utilized in mobile fashion, are not well suited for easy transport with regard to size, shape, and/or weight.

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There is also seen in the art a variety of smaller, typically less heavy, low height grills that are versatile in the sense of being light and of small volume for easy transport (e.g., from the

garage or house out to the lawn or to a vehicle for use at a park, campground, sporting event tailgate party or the like).

There is also a need in the art for improved cooking waste capture as in grease dripping down to the base of a grill assembly. There is also room for improvement in the prior art for improved heat dissipation within a grill assembly.

SUMMARY OF THE INVENTION

The present invention includes a cooking apparatus that is highly versatile in providing the advantages of a supported grill assembly (e.g., a pedestal supported grill assembly) as well as a removable grill assembly releasably attachable to a support stand of the supported grill assembly. A preferred embodiment features a removal grill assembly that is self-integrated or stand alone (e.g., can be removed from the support structure and has its own support structure which is, for example, lighter and/or shorter in nature as compared to the less mobile “stand-up” support stand). Preferably the grill assembly is fully integrated with no additional components needing to be attached or utilized, except for, perhaps, fuel source means, as in a gas tank or cylinder, fuel briquettes, etc.). Thus, an embodiment of the invention provides a cooking apparatus, which includes, in one mode of use, the combination of a support device and grill supported by the support device, and, in a second mode of use, involves a removed self integrated grill assembly, as in “ready for immediate use” without further grill attachments and/or assembly or disassembly. For example, a grill housing with integrated, manipulatable leg support assembly that is adjustable between a storage mode and a grill in operation mode, as in a collapsing and expanding leg assembly which remains fixed to the grill’s main housing during both states.

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The present inventions cooking apparatus includes a removable grill assembly and a stand-up grilling embodiment with a support stand that places the grill assembly at a higher level for ease in stand-up cooking without environmental height increasing support structures. For example, under the present invention there is provided a stand up cooking grill assembly mode and a mobile grill assembly mode which modes allow for a greater variety of usage environments as in different location low level ground usage or environmental higher level support situations, as in a table or the like for the grill assembly when separated in addition to the noted stand up mode. In other words, the dual mode capability of a preferred embodiment of the present invention makes for a highly versatile, mobile grill well suited for picnic table support or other typically preferred smaller grill settings as in tailgate events, campgrounds, and beach usage, while the other mode provides a more sedimentary, generally non-mobile assembly (outdoor deck, poolside, or backyard for repeated usage at a common position).

One embodiment of the present invention includes coupling means for releasably coupling the grill assembly and support stand, as in a telescoping relationship with a projection on one and a caption recess in the other which preferably has a slide contact relationship and matching peripheral shapes to avoid wobbling of the grill assembly when installed on the support stand. A preferred embodiment also includes means for releasably securing the grill assembly to the support stand once coupled. The means for releasably securing preferably includes non-tool release securement means (as is preferably true for the coupling means) with one example being a releasable securement assembly with a first securement component on one of the grill assembly and support and a second securement component on the remaining one of the grill assembly and support. As one example, there is provided a latch on one of the two and a catch receptor on the other of the two, as in one or more over-center latch devices. For example, in a preferred

embodiment a pair of opposing (e.g., diametrically on opposite side walls) latches are provided on the support stand and a corresponding number of capture recesses are provided or supported on, for instance, the base housing of the grill assembly, as in the aforementioned coupling projection, for engagement by the latches and releasable securement of the grill assembly to the support stand. Use of more permanent securement means (e.g., tool required fasteners) is also featured under another embodiment of the present invention, either alone or as a supplement to the non-tool embodiment. For example, dual tool and non-tool securement means may be provided as when extended periods of usage in assembled condition are anticipated (pre-purchase, storage, shipping, etc.), while periods of dual use are also contemplated. However, a preferred embodiment features a non-tool, hand releasable (and preferably also hand securing) securement assembly with one embodiment featuring the aforementioned latch arrangement, and other examples including thumb screw fasteners, grasping handle/bolt combinations, spring biased extension pins, circular rotating latch and clasp assemblies, combinations of the above, etc.. As an additional example, in one embodiment there is provided a plurality of thumbscrews (or, as another example, threaded fasteners with associated turn handle) which extend into aligned apertures formed in mating or adjacent surfaces (e.g., three side as in the two sides and rear) of the respective grill assembly and support stand reception section.

As previously indicated, the grill assembly is preferably of a “ready-to-use” type once removed from the support stand and upon completion of any associated expansion or component manipulation between a support stand reception position and grill assembly stand alone position. As one example, a grill assembly of the present invention includes a leg assembly, which is preferably a collapsible leg assembly, that collapses into a support stand reception mode which facilitates coupling of the combination via the coupling means and, upon removal from the

support stand, is manipulatable into a self support mode which can be carried out with minimal operator assistance, as in pulling, turning, shifting, etc. of one or more components of the leg expansion assembly. Alternatively, such action is either facilitated or replaced with an automatic manipulator means, as in a device for automatically affecting expansion or movement of the grill assembly self support components upon removal of the grill assembly from the reception area of the support stand. For example, in one embodiment of the invention there is featured a collapsible leg assembly with spring bias which biases the grill assembly into a leg expansion state and helps retain that state. However, such an arrangement can make support stand insertion and attachment more difficult for the operator who has to work against such an automatic expansion device (at least until a collapsed leg latching device can be implemented (e.g., a spring biased pin supported on a slide post that can retain a sliding ring in a collapse mode until released in umbrella like fashion)). Accordingly, an embodiment of the invention includes a device that can be easily manipulated by an operator to adjust the grill assembly from a collapsed storage state to an expanded self support stand alone state which is free of any position biasing device.

In one embodiment, the contraction/expansion leg assembly comprises a bottom post, a spoke like lever assembly, and an adjustable leg set. For example, there is featured a lever assembly that includes a slide ring slideable along a post extending from or below a lower bottom housing of the grill assembly. Also, star extension levers or link members are circumferentially spaced about the ring and pivotably and/or slideably attached thereto, and the outer ends of the levers are pivotally and/or slideably attached to intermediate portions of support legs that extend down from the lower region of the grill assembly. The upper ends of the stand alone grill assembly legs are preferably pivotally and/or slideably secured to a base region of the

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grill housing assembly and provide support to the grill assembly cooking enclosure and fuel and/or heat supply means if present when in use. The legs preferably diverge outwardly in going down from the bottom of the base housing of the grill assembly and are of a length and number (e.g., a single one with largely enlarged footprint (e.g., a shorter sub-pedestal arrangement), preferably at least two legs (with intermediate and large footprints), and more preferably three, four or more legs) to provide a stable platform for the grill assembly when separated from the support stand. In one embodiment of the invention, the free ends of the legs (which preferably are flat bottomed, expanded regions of the legs) extend out to a radial intermediate region between the central vertical axis of the grill assembly and the direct down shadow edge of a peripheral edge of the grill's base cooking enclosure housing and more preferably radial out to that peripheral edge or radially beyond, as in radially 25 to 50 % farther out from the outer shadow edge location of the base housing.

Thus, in use, when the grill assembly is removed from the support stand, the sliding ring (the ring and post preferably being circular in shape but other configurations are also possible, as in matching polygonal configurations) slides or is slid down along the slide post taking with it the connected interior link members which cause the legs to expand out as the link members go from a more vertical state to a more horizontal state. As one example, the outward extension of the link members cause the legs to adjust from an initially vertical or close to vertical collapsed state to an expanded downward and outward sloped grill support state. Preferably the full expansion state of the legs puts them at about a 30 to 60° (e.g., 45°) slope arrangement and also places the legs in a temporary lock-out state, as in each link member of the spoke link arrangement being moved to a generally horizontal and/or straight line status which locks out the legs in their expanded state, particularly with the weight of the base housing on the outwardly

4# sloping legs. The slide post is thus preferably made to accommodate a sufficient slide range in the ring to achieve that temporary lock out state in the leg support levers, with preferably a degree of additional downward extension in the slide post to avoid undesirable release.

Alternately, there is featured a post cap placed at the lower end of the post to lock on the ring.

5 The grill assembly also preferably has a main base housing well suited for encompassing a heat source or heat supply means as in a gas burner, an assembly of briquettes, coal, wood, electric heater units, etc. In one embodiment a gas burner is provided as in a propane burner head which is supported within the interior of the main base housing as the heat supply means. The gas burner is in gas flow communication with gas line conduit(s) that work in conjunction
10 with a fuel source supply means, as in a propane tank. The grill assembly main base housing also preferably provides support to the gas supply lines and a gas and air flow control device (e.g., valve). In addition, the base housing also preferably supports a lid as in an integrated (rotatably attached) lid, although a completely removably lid or cover is also featured under the present invention. An additional embodiment includes a flame disk insertion with reference
15 being made to US Patent No. 6,012,382 sharing at least one common inventor with the present case which illustrates various flame disk embodiments and is incorporated by reference, as well as a base pan insert as in one of the base pans described in US Patent No. 6,029,566 also sharing at least one common inventor, and which is also incorporated herein by reference. The present invention further includes additional improvement in its flame disk and base pan configuration
20 which is well suited for cooking waste removal and high efficiency heat dissipation. A suitable grill rack is also sized for support within the base housing.

As noted above, a preferred embodiment features a cooking apparatus which comprises a ready to use grill assembly which has the same assemblage of components within the support

stand support mode as it does in the separated from support stand, self standing self-supporting mode. In one embodiment of the invention there is provided gas fuel supply assembly which is associated with the grill assembly such that the same gas supply supply and control system is utilized both when the grill is in support stand mode and when on its own. For example, a gas control knob with gas valve associated with it is featured in one embodiment to provide variations in the fuel/oxygen(air) mix being fed to a burner head in the base housing (e.g., a cyclone burner). Furthermore, there is also preferably included a gas connection device that utilizes a gas (or in-feed) line (e.g., flexible intermediate gas line) with gas canister connection free end, or a gas canister by itself connected directly to a burner in-feed line. A flexible gas line is connected in one embodiment at one end to a more rigid grill assembly (e.g., the grill base) supported burner feed line and has an opposite end suited for connection with a gas source as in a 20 lb propane tank or a smaller embodiment, as in a 1 LP gas cylinder. The gas connection between the gas source and burner head preferably includes a grill mounted gas supply pressure regulator to which is either attached the intermediate (e.g., flexible) gas line or the gas canister directly due to a common thread arrangement. In addition, relative to the gas supply means, there is also preferably provided, in gas communication with the burner head, a relatively rigid supply line that extends out from the main grill housing and includes, for example, the noted intermediate gas line functioning as a propane tank hose line attachment means for use with a 20lb LP (9.09 kg) gas cylinder supported on the ground or like and positioned a distance away from the support stand. In an alternate embodiment a smaller gas container is provided, as in a 1lb LP gas cylinder, that can be attached directly to the rigid supply line device (e.g., to a threaded port in the regulator) so as to have the gas cylinder supported/suspended off the ground

by way of its connection to the preferably rigid supply line device (with or without additional support features such as a holster support or platform supported on the support stand).

This direct connection of a smaller gas supply canister is also preferably applicable to the grill assembly alone mode, and, in a preferred embodiment, the supply line device is connected to a part of the grill assembly so the entire supply line device goes along with the remainder of the grill assembly upon removal of the grill assembly from the support stand. In view of the removed grill's typical mobile nature, the use of the 1 lb canister is deemed to be a desirable combination in that the small canister is sufficient for most remote cooking usages and is easily mobile like the grill itself. In the small canister use embodiment, it is possible to use the gas canister while in the support stand and then remove both the grill assembly and attached canister away from the support stand while keeping the combination of the grill assembly and gas supply container together during the transport to a location remote from the support stand. This facilitates ease of use in going from one mode to the other in that the gas supply remains unaffected during removal and movement away from the support stand.

A preferred embodiment of the invention also preferably includes a drip reception collector, as in a drip tray with a preferred embodiment featuring a drip tray that is supported by a component of the grill assembly, as in a slideably supported tray supported at the lower region of the housing. In one embodiment there is provided a telescoping bottom portion of the telescoping projection of the base housing designed to nest within a reception area of the support stand. The drip collector is preferably supported so as to be adjustable between a storage state (e.g., a slid in state) wherein it does not interfere with the insertion of the grill assembly into the support stand, while also being adjustable to a collector opening access state to facilitate removal of collected material (e.g., a sliding drawer arrangement as in one with complete slide out

4 freedom or a stop with or without additional multi-positioning capability as in the freedom to pivot into a dumping orientation following assuming a slide out state.)

5 The present invention also features a waste (e.g., grease) flow (includes falling solid material and/or liquid flow material) dispensing arrangement which facilitates the capture and removal of grilling waste, as in grill food components, ash, etc., in conjunction with the noted drip tray. To facilitate the grease flow dispensing the dispensing arrangement of the grill assembly is self contained relative to the removable grill assembly, and thus avoids involving or contaminating the support stand. That is, there is avoided a high degree of pedestal cleaning requirement. The grease flow dispensing arrangement includes a flame disk having a main body
10 that is preferably horizontally planar and has a downwardly curving peripheral end (preferably continuously all around the periphery, although only some of the sides (if multiple sides involved) is also featured under the invention). Preferably the downward flange portion of the flame disk extends essentially about the entire periphery (e.g., 85 to 100 %) as it facilitates heat retention relative to the heat source below. The flame disk also preferably has tear dropped
15 shaped apertures covered over by uplifted covers to provide efficient heat dissipation and with the covers providing protection from grease falling within the center area of the grill assembly, which is less suited for waste removal.

The grease falling from the flame disk falls into a base pan having an enlarged, centralized interior aperture through which extends a burner head and/or through which flows
20 heat from a heat source below (gas head, fuel briquettes, etc.) and which is surrounded by an upstanding flange member which helps capture grease between that flange and an outer slopping wall extending up off the intermediate floor region of the base pan. The base pan has a slight slope down from (e.g., 10° or less, as in 2 to 5°) with a smaller drain aperture provided within the

intermediate floor region and preferably closest to the lower most portion of the intermediate floor region (e.g., the drain aperture having an edge coincident with the border edge between the base pan's shaped outer wall and its floor region or just inward by 5 inches or less). Thus, any grease dripping off the flame disk will first be captured between the flange defining the central burner head reception aperture and the outer sloped wall of the base pan (which outer wall can also function to direct grease down to the intermediate floor region). Further, any grease received by the intermediate floor region is directed under the force of gravity toward the lower positioned drain aperture. The floor region described herein can also include, for example, a continuation of the outer wall region, as in the lower half of a semi-circular base pan with the aperture then preferably moved closer to the central aperture flange, although a preferred embodiment features an intermediate floor region made distinct from the side wall, as in the aforementioned planar, sloping downward intermediate floor with corner break leading into the upwardly extending wall region of the base pan (e.g., the more radially outward positioned drain apertures facilitate maintaining the grease away from the burner head or other heat source more centrally positioned and, as explained below, provides for usage of the grill base configuration to help channel grease into a desired location relative to the drip pan).

For example, in one embodiment, the base pan is positioned (e.g., suspended) above the bottom floor of the grill base (e.g., above the gas flow piping and ignition components, if gas flow is involved) and has means for receiving and directing waste into a desired feed location relative to an aperture in the grill base bottom leading into the receiving cavity of the drip pan, as in a sloping side wall section that is integrated with an edge of a receiving cavity for the drip pan which can be, for example, a corner edge of the drip pan and/or the grill base's floor aperture. For example, a welded or otherwise fixed ski-slope insert for directing grease falling from the

4 (with or without confined upper extending side edge walls) base pan grease aperture or an integrally formed section of the grill base itself (e.g., such as a punched in section via a die or original molding pattern) can be utilized, which is either planar or has a slight concave cross-section to facilitate flow directing. The sloping nature of the receiving and directing means and its relative positioning to the grease aperture provides for, with the assistance of gravity, all of the grease captured in the base pan to be properly focused and directed into the drip tray to avoid waste build up or contact with other less desirable areas. The receiving and directing means thus directs the grease dripping out of the grease aperture into the desired receiving location in the drip tray, where it can be readily discarded once sufficient build up has occurred, simply by sliding or otherwise removing the drip tray from the drip tray receiving aperture provided in the grill assembly. Furthermore, this waste capturing arrangement is self contained in the grill assembly and fully functional in both the combination mode and the grill assembly stand alone mode, and preferably is provided with a pull out handle.

15 **Brief Description of the Drawings**

Figure 1 shows an exploded view of an embodiment of the cooking apparatus of the present invention.

Figure 1A shows a top plan view of the grill base shown in Fig. 1

Figure 2A shows a perspective, rear view of the grill assembly alone, which in Figure 1 is shown as a component of the combination grill assembly and stand-up support structure of the cooking apparatus.

Figure 2B shows a front elevational view of a grill assembly which is a self-integrated, stand alone grill assembly.

Figure 2C shows a right side elevational view of the grill assembly.

Figure 2D shows a left side view of the grill assembly.

Figure 2E shows a rear elevational view of the grill assembly.

Figure 2F shows a bottom perspective view of the grill assembly of Figure 2A.

Figure 2G shows the grill assembly of Figure 2D with its cover open and its cooking grill surface and heating means illustrated.

Figure 2H shows a left side and bottom perspective view of the grill assembly.

Figure 2I shows a rear corner perspective view of the grill assembly.

Figure 2J shows a rear side and bottom perspective view with the leg assembly collapsed.

Figure 2K shows a cross-sectional view of the grill assembly taken along cross-section I-I in Figure 2E.

Figure 3 shows the cooking apparatus with the grill assembly in a collapsed state to provide for insertion and removal of the grill assembly relative to the stand-up grill support of the cooking apparatus, and with an alternate grill assembly securement means than that shown in Figure 1.

Figure 3A shows a view similar to Figure 3, but with a person holding a de-coupled and removed grill assembly.

Figure 4 shows a front elevational view of the grill assembly following insertion or placement of the grill assembly into a coupled position relative to the support stand.

Figure 5 shows a rear elevational view of that which is shown in Figure 4.

Figure 6A shows a right side, perspective view of that which is shown in Figure 4.

Figure 6B shows a right side elevational of that which is shown in Figure 4.

Figure 6C shows a left side elevational of that which is shown in Figure 4.

Figure 7 shows a perspective, upper view of the support stand following removal of the grill assembly with over-center latch on two sides.

Figure 7A shows an alternate embodiment of the support stand having a multi-piece stand base shown close to assembly completion.

Figures 8A to 8E show various views of the cooking apparatus of Figure 4 with large container supply gas heater assembly with heater means (burner) in gas communication with a gas source (20lb LP container).

Figure 9A provides a close up view of the grill assembly and support stand combination with releasable securement means which features a latch arrangement shown in an unlatched state with grill assembly yet to be separated from the stand.

Figure 9B shows the latch in an intermediate grill assembly securement state.

Figure 9C shows the finger manipulatable (no tool required) latch being manipulated towards its final locking state.

Figure 10 shows a side elevational view of the cooking apparatus with smaller volume fuel supply supported thereby.

Figure 11 shows that same fuel supply being used with the grill assembly following removal from the support stand and placement at an independent location.

Figure 12 shows the fuel source control panel and adjustment knob that is functional both relative to the combination state and in the separated grill assembly.

Figure 13A shows a top planar view of the flame disk shown in Fig. 1.

Figure 13B shows a cross-sectional view taken along cross section line II-II in Fig. 13A.

Figure 14 shows an alternate upper insertion in the support stand of Fig. 1.

Figure 15A a top plan view of the base pan insert shown in Fig. 1.

Figure 15B shows a cross-section view taken along line IV-IV in Fig. 15A.

Figure 15C shows a cross-sectional view along III-III in Fig. 15A.

Figure 15D shows an enlarged view of circled region A in Fig. 15C.

5 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Figure 1 illustrates an exploded view of a first embodiment of the cooking apparatus 10 of the present invention comprising a lower portion 30 and upper portion 20 that is removable from the lower portion 30 and is represented in Figure 1 by the cooking apparatus components in exploded view positioned above the upper, open end of the lower portion 30.

10 Lower portion 30 is shown in Figure 1 as a grill support structure, which, in a preferred embodiment, is a support stand of pedestal design. Support stand 30 includes a base support portion 32 and an elongated stem portion 31. The base support portion 32 and stem portion 31 are preferably rigidly secured to each other as by way of a weld or nut/bolt connection. Support stand 30 is further shown in Figure 1 to have a multi-sided (e.g., square), rounded corner

15 periphery base 32 from which centrally extends a hollow post or stem 31. Base 32 preferably presents a larger foot or contact surface periphery relative to the bottom of stem 31 to provide a stable platform to the upper portion 20 which in Figure 1 is represented by a gas burner grill assembly. Base 32 can further be weighted in ballast like fashion as in providing an interior cavity for reception of weight material such as sand to further increase stability and to further

20 avoid knock over. In an alternate embodiment, there is featured base fixation means as in bolt(s) or threaded aperture(s) which enable the support stand to be more rigidly fixed in position for even greater preference location stability as in a deck or cement pool side. In a preferred embodiment of stand 30, base 32 is of sufficient inherent weight and foot pattern to provide the

desired degree of comfort relative to stability from bottom to grill support upper end (e.g., a square base of 1 to 2.5 feet sides, as in a 2' x 2' square base), free of additional hold-down means as in the noted ballast. Alternate embodiments of the support stand include, for example, support stems of continuous cross-section (e.g., mounted in the ground or in a cement or in a cup support placed in the ground or of a relatively large cross-section along the entire length).

Figure 7A shows an alternate "assembly required" version of the support base 32 featuring four trapezoidal base sub-components 32A, 32B, 32C and 32D having common angled adjacent side edging with suitable fastener means as in bolt tabs 135 provided on each for receiving nut and bolt combination 137 (similar tab and nut and bolt combinations are preferably further provided at the interfacing edging of the base of stem 31 and the radially interior edging of the trapezoidal sub-components (one set identified by reference no. 132 in Fig. 7A)).

Also, in a preferred embodiment featuring a pedestal design, as in Figure 1, the stem has a converging cross-section in going from its base to its upper edge E, with the base 32 also preferably having a sloping upward, from out to in, upper surface. In addition, a preferred embodiment features a stem having an upper end section which defines an upper grill assembly reception cavity 25. For example, as shown in Figure 1, stem 31 has upper free edge E which defines opening O, which leads into cavity 25 with opening O, having an area sufficient to receive a portion of the grill assembly (e.g., an insertion section or telescoping portion, as in the entirety of the collapsible leg assembly and a grill coupling projection portion as described below). In addition, edge E and the reception cavity 25 are preferably arranged to provide sufficient coupling projection and leg assembly insertion depth.

As shown, grill base 22 preferably has a peripheral footprint smaller than that of base 32 to facilitate stability and avoid an overhang relationship relative to the base (e.g., 30% or less in

maximum side length or diameter if circular), although an overhang relationship is also featured under the present invention, particularly with a heavier weight, stable support stand.

In a preferred embodiment, the stem is hollow from its exposed bottom edge of engagement (e.g., a weld or underlying bolting) with base 32 to its upper free edge E (e.g., a seamed or folded upon itself sheet of metal).

In the embodiment shown in Figure 1, the area defined by edge E is about 9 to 144 square inches with a periphery of about 3 inches to 12 inches (e.g., a square cross-section with sides of 4 inches being illustrative). Edge E preferably includes one or more straight sections to avoid, for example, relative rotation between the grill assembly and stand, and to facilitate coupling as well as attachment of the mating component with securement means. In addition, there is also preferably provided one or more corners in edge E to facilitate desired relative alignment and positioning of the upper portion and lower portion when in an assembled state. The meshing corners of the support stand and an inserted projection of the grill assembly also help in alignment during telescopic insertion and telescoping passage along the stem's central axis.

The upper portion 20 and lower portion 30 can be made of material known to those in the related field. Preferably, the material used to make the upper portion 20 and lower portions 30 are flame resistant (e.g. flame resistant metals or plastics). Preferably, the material is also rust resistant, as in stainless steel or black steel, to be readily usable in an outdoor environment.

As shown in Figure 1, the upper portion or supported portion 20 of cooking apparatus 10 comprises a grill assembly base housing and associated independent leg support structure 12 assuming a ready to use state (e.g., leg assembly expanded out into a larger periphery foot print coverage than occupied by the upper edge E of the support stand and sufficient to provide stable support to the remainder of the grill assembly). This expansion state is derived from the

collapsed state shown in Figures 3 and 3A representing the insertion and support stem reception state of the leg assembly. That is, as shown in Figure 3, while in a supported by support stand 31 storage state, leg assembly 12 has a peripheral footprint that is less than that of upper edge E defining opening O as to provide for insertion in telescoping fashion of leg assembly 12 into opening O followed by projection portion 14 used as an insertion or coupling means during telescopic connection as explained in greater detail below. This projection is sized in the embodiment shown to be in sliding contact (e.g., 0.00 spacing or preferably at least less than an 1/8 inch clearance to provide for greater “no wobble” grill assembly stability).

As shown in Figures 1 and 2A to 2K, grill assembly 20 comprises main grill housing assembly HA which comprises, in combination, lid 21 which forms an upper cooking enclosure (and is preferably generally sealed off to provide a cooking enclosure with the exception, for example, of one or more vents 21a which can be either permanently opened or provided with adjustable closure shutters (not shown)) as well as a back vent spacing LV described below. Main grill housing assembly HA further includes base housing 22, which forms a bottom half, preferably sealed off, cooking enclosure except, for example, for a drip ash passage aperture PA (Fig. 2I) at its bottom as described in greater detail below. As shown, grill base housing 22 preferably has sloping downward and inward walls that merge with the bottom center of the base housing where the one or more apertures are provided in the bottom floor region 61 (Fig. 2F and 2K) of base housing as well as side wall air intake aperture SW (Fig. 2F). An alternate embodiment of the invention includes a solid or continuous base of floor wall. In a preferred embodiment, though, floor region 61 preferably includes flanging or a wall section closing off the bottom and providing underlying support for burner 43 on burner stand SS (Fig. 1A). The combination of lid 21 and base housing 22 provides a suitable cooking enclosure.

Additional internal components can also be provided as in components that are varied depending on the cooking technique desired such that some or all of the below described interior grill components might be omitted or replaced with alternate type of grill components. Most intended usages include the use of one or more cooking grill racks as in grill rack 52 (Fig. 1) having slide stop back extension 52a adjacent vent space LV (Fig. 25). Grill rack 52 is shown supported in the base 22 via the ridge 22a that is formed in the top of the grill base 22. Also as can be seen from Figures 2H and 2J, the top lid 21 and grill base 22 connection arrangement preferably features direct, sealing contact along the sides and front of the grill, while the hinges H1 and H2 are designed to accommodate rear side venting region LV that has food grill section 52a providing a food slide off blocking function while allowing for gas venting and with downward flange section FL providing for a downward, then further out, and up exhaust gas flow passage. In a preferred embodiment, there is also provided within base housing 22, base pan 50 which (and as described in the earlier noted US Patent No. 6,029,566) is shown to include a bowl or pan region having a bottom aperture 50a with an upwardly extending peripheral flange 50b.

Base pan or inner bowl 50 is shown in Figure 1 as including upper outer extending flange portion 50c sized for reception within a stepped peripheral zone of ridge 22a in base housing 22 in sealing fashion (which helps in avoiding undesirable flow leakage external to the below described grease channeling arrangement). Figure 15D provides an enlarged, cross-sectional view of the two step shoulder arrangement for outer flange portion 50c. The inner flange step in the double step outer edge of base pan 50 (see Fig. 15D) provides a grill rack support location.

Housing assembly HA preferably comprises one or a set of venting apertures as in the upper lid venting aperture 21a, best shown in Figure 2A, which provide for air/gas flow in and

out of the grill enclosure. Additionally, as best shown in Figure 2B, lid 21 includes a front wall portion 62 (opposite rear wall portion 63 shown in Fig. 2A) with front wall portion 62 having opening handle 66 as well as a temperature gauge 68 to facilitate cooking temperature control. (See also Figure 2K). Lid 21 also preferably features a flange or beaded bottom peripheral edge 64 designed to overhang and extend over a stepped flange peripheral section 22a of base housing 22.

As shown in Fig. 1, flame disk 51 is positioned over aperture 50a by way of legs 51b to facilitate heat dispersion in a desirable fashion as explained in the aforementioned US Pat. No. 6,012,382. Thus flame disk 51 has a main body suspended over aperture 50a in base pan 50.

Flame disk 51 also has a bottom plate 51e with heat dispersion channels 51a, which, is suspended over the head of burner 43 to help dissipate heat over a broader range below the grill rack with burner 43 being connected to the knob via at least one gas valve line assembly as in one including gas valve 42 shown in Figure 1.

Figures 13A and 13B provide a top planar and cross-sectional view of flame disk 51 and as can be seen include tear drop or radially inward converging heat dissipation apertures DA which are covered over with concave cross-sectioned covers 51a. An additional feature not illustrated in the embodiments featured in the aforementioned US Pat. No. 6,012,382 is the inclusion of downwardly directed peripheral edging PE that is preferably continuous about the entire main plate siding of flame disk 51, and has a relatively short radial length (e.g., less than 10% of a flame disk main plate edge length (or diameter) but sufficient to help hold in some degree of heat to a location under the flame disk to facilitate the heating up of the flame disk and use of its dissipation apertures DA.

Extending below grill housing assembly HA is combination or coupling section 14 which preferably includes a downwardly extending projection that has a periphery corresponding to the edge between the bottom wall 61 and sloping side walls (e.g., wall 48) of base housing 22.

Projection 14 is illustrated in Figure 1 as comprising a vertical flange with a lower projection

5 wall section which provides one or more interior or upper sliding surface(s) on which receptacle drawer or drip tray 27 (Fig. 2A) slides. As shown in Figures 3 and 3A, projection 14 is shaped and sized for insertion into opening O defined by edge E so as to provide a snug fit (preclude rotation and preferably provide a degree of stability by way of the male/female connection). For example, a range of actual sliding contact to less than a 1/8 inch clearance between the

10 telescoping or coupling surfaces of grill assembly 20 and stand 30, is illustrative of a snug or stabilizing coupling fit with the periphery of the edge E and projection 14 preferably being of the same shape.

In Figure 1 there is further illustrated a first embodiment of securement means for securing grill assembly 20 to support stand 30 following coupling. Projection 14 is shown as
15 having apertures 23A designed to align with stem holes 33 formed in the upper end of stem 31 with the apertures 23a, holes 33 and thumbscrews 34 working together to provide tool less securement means. Thumbscrews on the rear and opposing sides illustrates a preferred three sided arrangement. Threaded thumb screws 34 are designed to extend into threaded apertures 23A to secure grill assembly 20 to support pedestal 30. A set of three is illustrated although less
20 or more than that numbered are options under the present invention. Thus, the combination of the aligned holes in the respective components and connecting fasteners 34 provide a means for releasable securing the mobile grill assembly 20 to the support stand. In an alternate embodiment, the securement means is represented by latch assembly 62 as shown in Figures 6C

and 9A to 9C which includes first latch component 64 comprising latch base 66 attached to the upper region of stem 31. Latch assembly 62 can be used alone or in combination with other securement means as in the aforementioned thumbscrews. In addition, under the present invention, reliance can be placed solely on the coupling arrangement (e.g., a frictional, telescoping relationship), although, the inclusion of the securement means provides an added factor of safety in ensuring the combination remains combined. A preferred embodiment features back, left and right thumbscrew fasteners and opposite side latch assemblies designed to latch into reception holes 102 shown in Fig. 9A formed on opposing side walls of projection 14. Once latched, if present, the thumbscrew holes are in a proper location for connection or reliance can be placed solely on the latches.

Grill assembly 20 is shown in Figure 1 in an exploded view near its support location relative to stand 30. Figures 2A to 2I show grill assembly 20 alone or separated from support stand in a ready to use state. Figures 2J and 3 show grill assembly 20 with its self support assembly (e.g., collapsible/expandable set of supports legs) in a collapsed state. In a preferred embodiment, the grill assembly is designed to combine or couple with stand 30 via an assembly means for combination or coupling as in the telescoping male projection 14 and female stem reception cavity 25. In utilizing a telescoping arrangement as the means for coupling, the self support grill leg set 12 is designed to be collapsible for reception into reception cavity 25 at the upper end of stem 31 together with a lower combination section 14 of base housing 22, which is also designed for insertion past opening O into reception cavity 25 in telescoping fashion. For a preferred embodiment, the coupling section is a projection extending down from the bottom of the grill's base housing 22 and has a peripheral configuration that conforms to that of edge E. While an arrangement wherein the grill assembly projection 14 is inserted internal to the stem in

a telescoping relationship is preferred, other arrangements are also featured under the present invention as in having the grill and assembly means for combination being of a capping nature relative to either or both of the independent grill support structure 12 and combination section 14 over the upper end of support stem 31. Examples include, an arrangement where one of the projection member and leg assembly extends to the exterior of the support stem and the other internally as in a spider like leg assembly received in reception grooves or conduits external to the opening O and the projection extending into cavity 25; or the collapsible leg set into cavity 25 and projection 14 housing a vertical flange peripherally designed to cap stem 31. The coupling means of the present invention further comprises, for example, a non-telescoping flange to flange arrangement with, for example, the connector portion or projection 14 being flush on the upper end of stem 31. Also, while a preferred embodiment features collapsible, downwardly extending legs as the grill assembly's self support structure, other arrangements are also featured under the present invention as in legs that collapse upwardly either internal to the base housing 22 or external to the base housing 22, or stick radially out to some extent. However, the arrangement wherein the collapsed legs and the coupling means are received within the stem is preferred as there is ample room in the stem, there is facilitated an expansion of those legs into self support mode, and a lower center of gravity is provided. Also, having projection 14 arranged to telescope internally within the stem, is a preferably easily "hidden away" embodiment.

Grill assembly 20 includes a base 22 and a dome lid 21 which is removable or retractable from the base 22. Preferably the dome lid 21 is attached to the base 22 at one side of each via at least one hinge as in the left and right bracketed hinge supports H1 and H2 as shown in Figs. 2C to 2E, featuring a U-shaped bracket component having an outer surface supporting a pivot post

PI (Fig. 2H) and arranged flush relative to a lid tab LT completing the hinge joint with the hinge connection, the dome lid 21 can be lifted into an open position with the dome lid 21, when in the open position, being preferably substantially perpendicular to the base 22. The dome lid 21 and base 22 can also be of any convenient peripheral or volumetric shape (e.g., round, square, triangular or other polygonal shape) and are preferably square in peripheral shape. The volume of the dome lid can have a variety of shapes as in the illustrated sloping, somewhat flat lid walls, a semi-spherical dome or other arrangement as in specific shapes (e.g., a football helmet shape).

In a preferred embodiment where a form of gas is used as a source of fuel (e.g., propane), a control knob 41 is attached to a control panel 40 (see also Figures 2B and 2C) which is attached to a front side wall 48 of the base 22. The control knob 41 can be manipulated by the user to control the amount of fuel or the size of the cooking flame while the cooking apparatus 10 is in use. The control knob is also preferably used in conjunction with a gas supply and ignition assembly gi such as that shown in Fig. 2F having an ignition unit which is known, per se, in the art (e.g., a push into ignite and rotation to control gas flow system as shown in Figure 12).

The coupling portion 14 shown in Figure 1 further includes means for securing the grill assembly S to the support stand which comprises at least one connection hole 23a, and preferably a plurality of connection holes 23a, as in one for one or more of the stem walls such as one for three or each of the four abutting or adjacent connector portion wall surface, and stem portion receiving wall surface combinations (see multiple holes 23a illustrated in Figure 1). When the grill assembly 20 and support stand 30 are coupled, the hole(s) 23a in the connector portion 14 meet with corresponding hole(s) 33 in the stem portion 31 of the base portion 30 such that an

insert 34 (e.g. a thumb screw) can be inserted in the matched hole(s) 23, 33 to thereby secure the upper portion 20 to the lower portion 30.

With reference to Figures 1, 2E to 2J and 3, a discussion of an embodiment of the stand alone grill support means 12 is provided. In the illustrated embodiment, stand alone grill support means 12 is in the form of an expandable/collapsible leg support assembly 12, having a leg sub-assembly (e.g., two or more legs 24 preferably with increased contact foot pads 24a). Figure 1 illustrates legs 24 diverging outward from a more centralized connection location with the remainder of the grill assembly as in upper pivot connection 70 (e.g., single flange pivot post or a double flange trunnion pivot connection). For example, in Figure 2F there is shown the upper and more radially internal leg end 24e pivotable secured to the double flange with pivot trunnion arrangement 70, while the twisted radially interior section 24C received a pivot pin therethrough arranged in equally circumferentially spaced series around post 25 on the bottom wall 72 of projection 14 as shown in Figure 2F (e.g., four legs at 90° intervals). As seen from a comparison of Figures 2F and 3, the pivot connections 70 are spaced in close proximity (generally at or slightly vertically upward or below) relative to the bottom edge of the outer flange defining the exterior of projection 14 such that the upper leg pivot connection 70 is generally hidden from view in normal use. Legs 24 each also have an intermediate linkage connection pivot attachment 76 generally positioned at about a halfway point along the length of each leg (e.g., a pivot post extending through) a U-shaped leg main body portion 78 with underlying cavity for receiving the transverse pivot post and radial outer end of leg expansion levers 24c as can be seen from the bottom view shown in Figure 2F. The U-shaped cross-sectional legs 24 further include no-scratch pads 80, as in the horseshoe shape plastic or elastometric material pads shown in Figures 2C and 2F secured to the free ends of the U-shaped main body of the legs 24.

Expansion links 24c extend radially inward from their pivot connection with respective pivot posts 76 with the U-shaped leg cross-section providing a degree of clearance for the radial external tip of links 24c to rotate while the opposite legs provide bridge support to the pivot shaft providing pivot point 76. The interior most ends of links 24c are secured to slide member 82.

5 Slide member 82 is shown to have an annular or ring shape and to conform in configuration with slide post 25 (e.g., a low friction concentric ring about post arrangement). In addition, expansion links 24c are connected at their radial interior ends to slide member 82 as in an interior pivot connection or coupling. Further, a preferred embodiment utilizes a twisted link (Figure 2D) having a generally horizontally planar exterior link section 84, on intermediate twist section 86
10 and a generally vertically oriented link section 88. In this way, the desired pivot axis orientation is attainable (both pivot axis extending horizontally) but relative to vertical and horizontally oriented link sections. Furthermore, the vertical extension of post 25 is shown in a preferred embodiment to be less than the vertical component of the outwardly sloping legs 24 (the rise aspect of the sloping legs) when in a grill stand alone support setting, but greater than a portion
15 of that rise taken at a horizontal plane intersection of the common height leg to link pivot posts 76. This horizontal plane also preferably extends through ring 82 as a horizontal “lock-out” arrangement when the grill assembly is in its ready to use independent from the support stand mode. When in the lock-out arrangement, the legs slope downwardly and outwardly from their upper grill connection point at, for example, an angle of 30° to 60°. The slide post 25, as in the
20 illustrated cylindrical tube shown, also preferably has a length which places at least 10% or more, preferably 25 % or more, of the post length below the above noted horizontal cross-sectional plane taken at pivot locations 76. The run or horizontal component of the slope preferably extends out to at least 60 % of a circle touching the exterior most peripheral points of

the lid (e.g., 4 points for a square lid configuration) and more preferably in an 80 to 130 % range along a horizontal. As to the vertical rise, the height that the legs lift the grill off a support surface is preferably within at least 75 % of the horizontal run (e.g., to conform with a desirable 30 to 60° slope and with a 45° slope being illustrative). A height D of 3 inches to 1.5 feet (e.g., 6 to 8 inches) is preferred between the bottom flange edge 82 in Figure 2D to the ground support surface G is (illustrative of a preferred stand alone grill height range). This is used in conjunction with a support stand 30 having, for example, a 2.0 to 3.5 feet (e.g., a 2.5 foot height) to provide an elbow level association relative to a person within a 5 to 6 feet height range. This relationship can be seen in Fig. 3A.

Figure 2J and 3 illustrate grill assembly 20 with its stand along leg assembly 12 in a collapsed state and ready for insertion of post opening O into the reception cavity 25 of stem 31. The collapsed state for leg assembly is achieved upon ring 82 being shifted upward along post 25 to preferably an abutment position relative to bottom wall 61 provided at the base portion of base grill component 22 (or a bottom wall of projection 14 is drawer cavity 27' (Fig. 2J) is designed to be closed off by providing a horizontal close off wall at lower projection edge 14e. As shown in Figure 2C, in going from a expanded self support position to a collapsed storage state, legs 24 rotate inward about pivot connection point 76 as shown by rotation arrow R, while links 24c each rotates in direction Sp about their inward pivot connection with ring 82. Once the ring reaches its end of travel the legs are arranged in a vertical or convergent configuration as shown in Fig. 2J to facilitate insertion into stem 31 as well as later removal in the manner shown in Figure 3.

Figure 3 also illustrates, in dashed lines, carrying bag B with handle 90 and zipper access opening Z (e.g., a zippered opening). When in the collapsed state, the grill assembly is easily

insertable into bag B or other carrying case, as there is avoided any outstanding volume increasing components such as legs that can easily catch on the bag opening edge when the grill is being inserted into the bag or against the walls of a confinement area such as a vehicle back seat.

5 In a preferred embodiment of the cooking apparatus, a gas burner system is included. To supply the gas burner with gas, there is provided grill gas flow line 60, best seen in Figures 2A and 2D. Gas flow line 60 is preferably a rigid gas line supported by the grill assembly as in securement to base housing 22 and/or projection 14. As shown in Fig. 2I, gas line 60 is shown having an exposed, outer line section 60a with pressure (low pressure maintenance) regulator
10 60b and threaded connect portion 60t. The above noted control knob 41 provides an on/off and rate adjustment gas supply control means between gas burner 43 and a gas supply source (e.g., directly from a gas cylinder screwed onto connection assembly 60b of the regulator or via an intermediate line as in a flexible line to a gas tank). For example, Figure 2A shows a flexible gas line 26 with flow valve securement end 26a and gas supply connecting end 26c. End 26a thus
15 includes means for attachment to the exposed gas line section 60a, while its opposite end 26c includes means for attachment to a gas supply canister, as in a 1 lb or 20 lb gas container (e.g., a standard 20lb propane gas tank).

Figures 2A and 2D further illustrate gas line 60 preferably being at least in part a rigid gas line (e.g., thick walled metal tubing that is not designed for bending, as in steel or thick
20 copper piping) that extends through an aperture (Ap – Fig. 2I) in the grill assembly (e.g., the bottom right hand corner of the receiver wall 49, within an inch or two of the base grill bottom wall 61 of base grill component 22 or a connection assembly bottom). Line 60 is preferably rigidly fixed to the grill assembly, as in a clamping or aperture fit arrangement between the line

and the grill assembly, etc., with a preferred rigid securement means including aperture wall contact as in W just inward of or clamping at the point of entry at aperture Ap for the rigid gas line 60. As shown in Figures 1, 2A, and 2F the rigid gas line 60 feeds into the burner supply line (BS-Fig. 2F) with gas valve controlled by control knob 41 and valve 42 and with ignition system
5 gi.

The illustrated embodiment of the present invention reveals a versatility in the choice of gas supply arrangement for both the stand alone grill assembly mode and the stand up support stand/grill combination mode. For example, Figures 8A, 8B, 8C, 8D, and 8E provide various views as to a large or extended use (e.g., week(s) or month(s) of typical use as in above 20 hours
10 of use at typical burner settings) gas supply source. In Figures 8A to 8E there is illustrated a 20 LP tank T as the illustrated extended use length gas source. Figure 8C illustrates flexible gas supply line 26 in a detached state relative to tank T while Figure 8B shows tank T in an attached state to flexible gas supply line 26. As noted above, supply line 26 is in gas supply communication with a rigid gas line component of line 60 having 60b and exposed rigid gas pipe
15 60a extending to the grill base housing where the interior portion of gas line 60 extends. Upon connection of threaded connecting end 26c to the threaded gas exit conduit of tank T, and turning on the tank's gas flow valve, gas is fed from the tank T to burner 43 via flexible line 26 and more rigid gas line 60 with control valve 42. A suitable flexible gas line link is at least 1½ feet and preferably two to four feet.

20 Figure 10 shows an alternate embodiment of the invention wherein a smaller gas supply source is utilized such that the cooking apparatus is free of any intermediate gas lines between the rigid gas line 60 and the gas supply source. In Figure 10, a smaller gas supply source is provided (e.g., one which provides about 2 hours of use during typical flow settings). Figure 10

also shows the smaller canister (e.g., a 1 lb propane canister) C being connected and freely suspended from its threaded connection with regulator 60b (i.e., the rigid nature of the gas line 60a and its stable connection with the grill assembly allows for sufficient strength to support at least lighter weight canister, as in the 1 lb gas tank). In an alternate embodiment there is added
5 an additional small tank support unit ST such that a platform or holster design arranged in conformation with the central thread access not being askewed while ST tank is in support position.

Figure 11 shows grill assembly 20 detached and removed away from support stand 30. As seen, gas supply source C is coupled with the grill assembly. For example, the same canister
10 can be maintained attached both during an insertion sequence (going from a stand alone grill set up to an insertion (following collapse, for instance) and securement relative to the support stand) as well as vice versa (going from a grill being in secured support relationship with the stand to a stand alone state (e.g., following leg assembly expansion, for instance)) with the tank ST either supported by the support substrate (ground or table, for example) or suspended with rigid line.

15 The securement means S of the present invention can take on a variety of forms with a preferred embodiment featuring a non-tool (hand manipulatable as to release from a final securement state and preferably also to reach a final desired state of securement) as in the illustrated thumb screw assembly, wing nuts, turn handle(s), relative to a threaded securement means sub-category or other sub-categories as in non-threaded fasteners such as spring biased
20 pop-out pins which are, for example, manually pushed in during the time of desired release, Velcro patch sets, rotating cam handle and ear clasp, latch assemblies, hybrid arrangements of the above, etc.

With reference to Figures 6A, 7, and 9A to 9C, there is illustrated an alternate securement means S which is of a non-tool type and which comprises over center latch assembly 62. Figure 9B illustrates latch assembly 62 having latch base 64, which provides a foundation for the latch assembly and is preferably mounted on a side of stem 31. Latch assembly includes finger handle 92 having a first end 94 pivotally secured to latch base 64 and a flange engagement second end 96. Clasp or hook member 98 is pivotally secured between these two ends with a preferred embodiment featuring hook securing opposite side apertures provided at an intermediate portion of the clasp handle 92 thorough which extend(s) the bar shaped hook handle clasp member(s) of hook member 98 at a lower height over center position. The opposite end of hook member 98 includes clasping end (male member) 100 (e.g., a bent bar hook section) which is dimensional for receipt within an aperture (female portion) 102 provided in a side wall of the projection portion 14 (e.g., forming a cut and then a die forced inward region above that cut to form a reception cavity for the hook end. Preferably there is provided two such over center latches an opposing stem side walls with corresponding hook reception recesses in side walls of the projection with a sliding friction fit therebelow (the clasping means pushing down the telescoping embodiments into their final state. The projection part can be nestled within the receiving part, the hook inserted into recess 102 on opposite side and then the handles finger manipulated down (e.g., simultaneously) to opposite sides to further move the upper component 20 and lower component 30 into a final secured combination state (see the finger manipulation shown on one side in Figure 9C). A reversed of the recess aperture/clasp section is also featured under the present invention, but providing the handle hook and base combination on the stem is preferred in most usages as the grill assembly is designed to be more mobile and stored in a

container and thus extra hanging extending components on the grill assembly itself is less preferable.

For detachment of grill assembly 20 from support stand the handle 92 can be toggled up to loosen hook component 98 for release from recess 102. Once hook component 102 is moved outwardly away from its grasping relationship with aperture 102 as shown in Figure 9A whereupon the grill assembly can be lifted up from its telescoping relationship and separated from the pedestal stem 31. Figure 7 illustrates the opposite side wall positioning of the latch assembly with grill assembly 20 removed.

Figure 12 illustrates gas igniter and flow control knob housing 40 with aperture instructions as well as a schematic view of knob 41, which is used in conjunction with a gas grill embodiment of the present invention, although a variety of alternate heat source based grill assemblies are also featured under the present invention including charcoal, wood, and other component type fuel sources, as electrical heat sources, etc.

Figure 14 illustrates a support stem with a substitute member 20', which can be utilized when the grill assembly 20 is removed for use and it is desired to come over the stem opening O. For example, if there is anticipated an extended usage of the portable grill assembly (e.g., vacation), alternate cover 20' can be placed over stem 31 as a substitute for the grill assembly. In Figure 14, the replacement upper component is an ornamented insert, although other covering means are also contemplated, either using common type coupling 14 and/or securement means S or alternate covering means as in a plastic cover cap or alternate outdoor pedestal supported components, as in colored shining spheres, bird baths etc. Also, the grill assembly is formed of a material to handle the associated high heat levels involved in grilling, as in preferably at least the support region of stem 31, although a variety of materials are available, particularly for the

support stand (e.g., metallic, preferably weather resistant either through coating or inherently, as in stainless steel, plastic, composite material, etc.).

With reference particularly to Figures 1, 2A, 2I, 2K, 13B, there is described the grease or cooking waste flow channeling means of the present invention designed to channel cooking waste derived from food resting on grill rack 52 or hanger GR (Figure 2K) down into drip pan 27 with minimized degrading contact with components less easily cleanable as in the burner and associated piping when gas is used while also providing a readily removable capture device.

As shown in Figure 2K when grease or the like falls down off rack 52 it comes in direct contact with either the inwardly and downwardly sloping walls of base pan 50 (shown alone in Figs. 15A-15C) whereupon it will travel down onto floor 50e) or it comes in contact with flame disk 51. If the cooking waste comes in contact with flame disk 51 it contacts either the main plate or the covers 51a covering over apertures DA and preferably having a dome shaped configuration (convex vertical cross-section) such that the waste is deflected onto flame disk floor 51e whereupon the rising heat and gases traveling through aperture DA will tend to move out the waste to an exterior portion of flame disk floor 51e whereupon it will flow or fall off in view of the downwardly sloping peripheral edging PE. Once it flows off edging 51e it again falls on the downwardly sloping side walls of base pan 50.

With reference to Figures 15A-15C there can be seen that floor 50e of base pan 50 has a sloped bottom as in a higher front to lower rear planar floor slope about the flanged central aperture 50a. Thus, any grease or the like received in base pan will be maintained on the floor area as upward flange 50b is of sufficient height to provide an internal block while the side walls function as an outer block. Figure 15B illustrates the slope in floor 50(e) having an angle X which preferably is a smaller angle (e.g., $< 10^\circ$) as time, heat and gravity tend to accumulate

waste at the lowest region of floor 50e. Accordingly, at this lowest region of floor 50(e) there is provided drain aperture 50(f) which can be made relative to small (e.g., less than 2 inch diameter) to promote focused drain exit locating relative to the grill base 22 below.

In this regard, reference is made to Figures 1A, 2I and 2K showing the grill base 22 lower wall 62 with an outlet aperture such as the moon shaped aperture MS in Fig. 2I (covered over by the burner head 43 schematic depiction in Figure 1A). As seen from the cross-sectional depiction of 2K there is provided a sloping wall surface 175 providing a ski slope like underlying support for waste dropping from waste aperture 50f in the suspended base pan above. Once received on sloped surface 175 (e.g., a separate plate component as shown in Figure 2K or an integrated (mold or punch formed) configuration in the grill base body. The sloping surface 175 is shown as extending from a border region with the inner surface of the rear wall of grill base 62 down to the edge of an aperture formed in the floor 62 of grill base 22 such that the flowing waste does not settle on floor 62 but drops through waste aperture (WA – Fig. 2I) and into the receiving drip tray 27. Thus, drip tray 27 (which is preferably of a drawer type configure) can be readily withdrawn from the bottom region of grill base 22 (e.g., the projection 14 region) as in Figure 2A and the waste discarded. A slope angle for surface 175 of 15 to 45° is illustrative and the interior edge of surface 175 preferably conforms to whatever edge shape defines the drop down into drip tray aperture in grill base 22.

It should be emphasized that the above-described embodiments of the present invention, particularly, and “preferred” embodiments, are merely possible examples of implementations, merely set forth for a clear understanding of the principles of the invention. Many variations and modifications may be made to the above-described embodiment(s) of the invention without departing substantially from the spirit and principles of the invention. For example, rather than a

sliding ring on the post, each leg may have a slide projection received in a slide slot in the post.

All such modifications and variations are intended to be included herein within the scope of the disclosure and the present invention and protected by the following claims.